

The Diachronic Fragmentation of Modal *by* in Ukrainian*

Halyna Sydorenko

1. Introduction

In this paper I am concerned with a number of changes that brought about the fragmentation of the Ukrainian modal element *by* in its development from Old East Slavic to Modern Ukrainian as the marker of the subjunctive mood.^{1,2,3} Although the discussion is focused on the diachrony of modal *by*, I first present a review of the synchronic analysis of *by* in sections (4) and (5) in order to lay a foundation for the diachronic developments in question. A detailed treatment of modal *by* (both synchronic and diachronic) makes up one of two case studies in my dissertation *The Atypical Morpheme: Two Case Studies from Ukrainian*.

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1. Ukrainian belongs to the Slavic family of languages. It is grouped within the branch of East Slavic, along with Belarusian and Russian.

In Old East Slavic the element *by* could be found in the following two contexts: non-indicative structures of the type 'if..., then...' and non-indicative complements of certain verbs of emotion. However, it is important to point out that both of these occurrences of the modal element *by* were one and the same. In other words, they both represented instances of nothing but a single morpheme. In contrast, the same cannot be said of the element *by* in Modern Ukrainian. In fact, I have previously argued (Sydorenko 1993) that the various occurrences of the element *by* in Modern Ukrainian are not one and the same. Altogether I propose that there are five distinct *by*-elements, distinguished by their function as well as by their formal properties. The synchronic situation suggests that the five *by*-elements create a grouping of similar-but-distinct elements. In morphological theory this concept is known as the morphological constellation (Janda and Joseph 1986, 1990 and Joseph and Janda 1988).

Since morphological constellations represent the workings of centuries of change, what is of interest is the process of diachronic fragmentation by which the unitary *by*-phenomenon of Old East Slavic became diversified over time. This process involved a number of distinct developments. The two most important ones are as follows: the morpholexicalization of the emotive attitude and the development of the emotive complementizer *ščob(y)*, a conjunction which introduces emotive clauses after verbs of emotive attitude (section 6.1.2);⁴ the degrammaticalization and semantic bleaching of *by* and the development of the comparative-simile complementizers *niby*, *(ne)mov (by)* and *(ne)nače (b(y))* in clauses of similitude (section 6.1.3).^{5,6,7} Also important is an example

2. Old East Slavic defines a period of time when there was a relatively high degree of unity amongst the linguistic varieties that gave rise to the three East Slavic languages of today, Ukrainian, Belarusian and Russian. Old East Slavic is chronologized from between the 11-13c.

3. In the tradition of Slavic linguistics any non-indicative mood, excluding the imperative, is generally referred to as the conditional. However, following Noonan (1985), I use the term subjunctive as a general designation for any non-indicative non-imperative mood. More specific terminology is used as needed, e.g. conditional (or conditional-subjunctive), emotive attitude, injunctive, evidential, etc.

4. Based on the way that it is written, it is implied that the form *ščob(y)* represents two possible variants, *ščob* and *ščoby*. The details of this are discussed in sections (5) and (6).

5. Both *(ne)mov* and *(ne)nače* may occur with or without the prefix *ne-*. Either way, the two expressions are synonymous. The prefix *ne-* may be considered as a kind of stylistic emphatic marker.

of a 'locally'-driven analogy (section 6.1.4).⁸ Finally, there is one instance of modal *by* that has undergone what may be called a complete 'deetymologization' (section 6.1.5). As a result it has severed its historical ties with the complex of five *by*-elements in Modern Ukrainian. All of these developments are discussed as evidence of the continual fragmentation of unitary Old East Slavic modal *by*. As such, they also provide indirect support for the synchronic analysis of a five-member *by*-constellation.

2. Modal *by* and the Subjunctive Mood in Old East Slavic

In Modern Ukrainian the modal element *by* functions as a marker of the subjunctive mood. More specifically, one of its most common functions is to introduce the conditional-subjunctive. At the same time, it is important to keep in mind that the modal element *by* has a number of additional functions, all of them related in some way to the notion of modality (see section 4).

As far as its function as a marker of the subjunctive mood is concerned, the modal element *by* inherited this function from the period of Old East Slavic. In Common Slavic, by way of comparative textual evidence from Old Church Slavonic and Old East Slavic, we find that the subjunctive mood would have been formed from the resultative participle (otherwise also known as the *l*-participle) and an accompanying auxiliary, taken from the copula verb *byti* 'to be'.^{9,10} The participle inflected for number (singular, plural and dual) and gender (masculine, feminine and neuter). The auxiliary

6. It is important to note that the element *by* is optional with either *(ne)mov* and *(ne)nače*. More on this appears in section 4.4.

7. As with *ščob(y)*, based on the way that it is written, it is implied that the form *(ne)nače (b(y))* represents two possible variants, *(ne)nače (b)* and *(ne)nače (by)*. The details of this are discussed in sections (5) and (6).

8. Local analogies cover only a subset of all data that would otherwise be expected to be subjected to their effects. In the case of modal *by*, the local analogy is being propelled only across a subset of the five *by*-elements. The use of the term local in this sense is based on Janda and Joseph (1986:99-100) and Joseph and Janda (1988:206), who speak of 'locally motivated changes in grammar' and 'local generalizations over (unified) subsets of the totality of the relevant data' respectively.

9. Common Slavic is the prehistoric ancestor of all the Slavic languages. It has been reconstructed by way of comparative evidence.

10. Old Church Slavonic is the earliest recorded Slavic language, ca. 10-11c. It is considered to be the ancestor of the South Slavic group of languages.

appeared inflected for all persons, either in the conditional (also called the optative) or the aorist (Schmalstieg 1983:157). Thus, there were two ways to mark the subjunctive mood. However, already in Old Church Slavonic the conditional inflection of the auxiliary had largely been replaced by the aorist inflection. Also, texts from the Old East Slavic period document the latter only (Vlasto 1988:169). Therefore, the following paradigm of the Old East Slavic subjunctive mood is given only with the aorist inflection of the auxiliary *byti*. As well, for ease of presentation, only masculine forms of the *l*-participle are shown.

- (1) The Subjunctive Mood in Old East Slavic (and Old Church Slavonic)
(based on Schmalstieg (1983:140))

paliti 'to burn'

	Singular	Plural	Dual
1p.	palilŭ byxŭ ¹¹	palili byxomŭ	palila byxově ¹²
2p.	palilŭ by	palili byste	palila bysta
3p.	palilŭ by	palili byše	palila byste

It is important to note at this point that the Modern Ukrainian modal element *by* derives from the 2/3sg. aorist form of the copula *byti*.

3. Modal *by* and the Subjunctive Mood in Modern Ukrainian

In Modern Ukrainian the modal element *by* has retained its function as marker of the subjunctive mood. Most commonly, it is used to introduce the conditional mood (or conditional-subjunctive) in irreal conditional structures. These are bi-clausal structures of the type 'if X were..., then X/Y would...', (e.g. 'If I were sick, (then) I would not go to school').

- (2) buv by ja xvorym, ne pišov by do školy
was(m/sg) MOD I sick not went(m/sg) MOD to school
'If I were sick, I would not go to school'

Note that the element *by* must appear in each of the two clauses. Also, when the co-occurring verb is finite, it needs to carry the past tense inflection. This does not mean,

11. The [ŭ] represents the back jer, a reduced vowel of the mid back region.

12. The [ě] is the jat', a mid front vowel, tenser than [e].

however, that the verb conveys past meaning.¹³ In fact, it is important to note that these constructions present only a relationship of contingency between the two clauses but make no reference to real time.

This is significant because it is also possible to have conditional structures that present action in real time. Consider the following English examples, given in past, present and future time respectively: 'If I was sick, (then) I did not go to school' or 'If I am sick, (then) I do not go to school' or 'If I am going to be sick, (then) I am not going to go to school'. In Ukrainian, conditional constructions presented in real time lack the presence of the modal marker *by*. Also, they use verbs in all three tenses, as required by the context of any given sentence. Finally, the subordinate (conditioning) clause is introduced by one of three possible complementizers, *jak*, *jakščo* or *koly*, all of them meaning 'if/when'.

- (3) *jak ja buv xvorym, to ja ne xodyv do školy*
 if I was(m/sg) sick then I not went(m/sg) to school
 'If (it is the case that) I was sick, then I did not go to school'
-

13. In a variety of languages, (for instance, English or French), the past tense is overwhelmingly encountered in expressions which appear in the subjunctive. This may suggest that, perhaps universally, the past tense is used to mark the subjunctive mood (and, more specifically, the conditional-subjunctive). Consequently, one may want to extend this generalization to Ukrainian, because of the requirement that a co-occurring finite verb needs to be inflected for the past tense. As it turns out, this is not the case. In Ukrainian, non-finite and nominal (verbless) expressions may appear in the subjunctive as long as the modal element *by* is present. Consider the following two examples which illustrate the conditional-subjunctive.

- (i) *jak nam by kupyty avto, to nam by bulo lehše*
 if we(DAT) MOD to buy car then we(DAT) MOD was(n/sg) easier
 'If we were to buy a car, it would be easier for us'
- (ii) *jak nam by bil'se času, to nam by bulo lehše*
 if we(DAT) MOD more time then we(DAT) MOD was(n/sg) easier
 'If we were to have more time, it would be easier for us'

In fact, Ukrainian, along with Belarusian and Russian, is the only Modern Slavic language that is capable of expressing the subjunctive by way of the element *by* in a clause whose verbal form is an infinitive (Brytsyn et al. 1978:191). And, since infinitival and verbless constructions with modal *by* are found lacking in Old East Slavic, this would seem to be an East Slavic innovation.

- (4) jakščo ja xvoryj, to ja ne xožu do školy
 if I sick then I not go to school
 'If I am sick, then I do not go to school'
- (5) koly ja budu xvorym, to ja ne budu xodyty do školy
 if I will (be) sick then I not will (be) to go to school
 'If I am going to be sick, then I am not going to go to school'

Both the real and irreal constructions are considered to be conditionals, due to the relationship of contingency they present. However, it is only the irreal conditional constructions that occur in the conditional mood. Given this dual use of the term conditional, both as a label for mood and syntactic construction, I use this term to refer specifically to type of mood. Following Garde (1963:129) I rename the conditional 'if..., then...' construction as the hypothetical construction. Correspondingly, real conditionals (examples (3-5)) are renamed as indicative hypotheticals because they appear in the indicative mood. Irreal conditionals (example (2)) are renamed as conditional hypotheticals because they appear in the conditional mood.

4. The *by*-Elements in Modern Ukrainian

In Modern Ukrainian the element *by* carries out a variety of modal functions. As a general marker of the subjunctive mood, the modal element *by* serves to mark a number of mood types. As was seen in section (3), most commonly it is used to introduce the conditional mood. However, it can appear as a marker of modality in a number of different constructions (see below for a discussion). At the same time, in some of its functions the element *by* can appear either as a word or as an affix. This means that there are a number of functional and formal properties to contend with when dealing with the modal element *by* in Modern Ukrainian. As pointed out in section (1), this speaks of the kind of diversity that would require one to recognize not one, but several instances of the modal element *by*. As mentioned, the total number of *by*-elements is five.

What follows is an enumeration and description of the five *by*-elements in Modern Ukrainian. Illustrative examples are given as well. To make the list of *by*-elements somewhat more transparent, each of the five *by*-elements is marked as being either syntactically independent or syntactically dependent. This is for presentation purposes only. Nevertheless, these indications anticipate some of the conclusions reached in section (5) regarding the word- or affix-like nature of the five *by*-elements.

(6) The Five *by*-Elements

- (a) Conditional *by*: (syntactically independent)
 (i) serves to mark conditional hypothetical clauses

- (b) Conditional/Emotive *by*: (syntactically dependent, forming part of the conditional complementizers *jakby* and *aby* and emotive complementizer *šcob(y)*)
 - (i) serves to mark conditional hypothetical clauses
 - (ii) serves to mark emotive clauses
- (c) Injunctive *by*: (syntactically independent)
 - (i) serves to mark attenuated imperatives
- (d) Comparative-simile/Evidential *by*: (syntactically independent, pleonastically co-occurring with the comparative-simile complementizers and evidential markers *(ne)mov* and *(ne)nače*)
 - (i) co-occurs with *(ne)mov* and *(ne)nače*, which introduce clauses of similitude
 - (ii) co-occurs with *(ne)mov* and *(ne)nače*, which serve as markers of evidentiality
- (e) Comparative-simile/Evidential *by*: (syntactically dependent, forming part of the comparative-simile complementizer and evidential marker *niby*)
 - (i) serves to mark clauses of similitude
 - (ii) serves as a marker of evidentiality

The *by*-element which serves to mark the conditional mood appears in conditional hypotheticals, a construction briefly described above in section (3).

- (7) *buv by v n'oho čas, dokonav by bahato*
was(m/sg) MOD in him time achieved(m/sg) MOD a lot
'If he had the time, he would achieve a lot'
- (8) *jak(ščo)/koly meni xtos' by dav hroši,*
if I(DAT) someone MOD gave(m/sg) money
to ja pišov by do kina
then I went(m/sg) MOD to cinema
'If someone were to give me some money, I would go to the cinema'

4.2. Conditional/Emotive (syntactically dependent) *by*

Just as its syntactically independent counterpart, syntactically dependent conditional *by* serves to mark the conditional mood in conditional hypotheticals. However, unlike its syntactically independent counterpart, the syntactically dependent *by* works as a suffix. Consequently, it is attached to the complementizers which serve to introduce the subordinate clause in the conditional hypothetical construction. At the same time, this instance of modal *by* appears in complements of verbs expressing emotive attitude. Here too, the element *by* attaches to the complementizer which introduces the emotive clauses.

As far as the conditional hypotheticals are concerned, there are only two complementizers that occur with affixal *by*. These are the complementizers *jakby* and *aby*. Both of these can occur only in conditional hypotheticals. In other words, they can never occur in indicative hypotheticals. Because of their restriction to conditional hypotheticals, they are referred to as the conditional complementizers. Note that the root of *jakby* is *jak*, a complementizer in its own right. In contrast, the root of *aby*, i.e. *a-* is bound. Both *jakby* and *aby* mean 'if', but the meaning of *aby* is somewhat more restrictive, i.e. 'if only'/'as long as'. As is the rule, both clauses must contain an instance of *by* and any co-occurring finite verbs must be in the past tense.

- (9) *jakby/aby* jomu xtos' pozыčyv troxy hrošej,
 if(MOD) he(DAT) someone lent(m/sg) some money
 to vin by to kupyv
 then he MOD that(ACC) bought(m/sg)
 'If someone were to lend him some money, he would buy it'

Apart from conditional hypotheticals, the syntactically dependent element *by* serves to express emotive attitude in complements of several verbs of emotion. All such verbs convey a strong sense of personal feeling with respect to the realization of the action expressed in the complement. The following is a list of these verbs: *bažaty* 'to desire', *xotity* 'to want', *prosyty* 'to ask/request', *vymahaty* 'to demand', *mołyťs'a* 'to pray', *blaťaty* 'to beg', *očikuvaty* 'to expect', *zasterižaty* 'to caution' and *bojaty's'a* 'to be afraid'.

Emotive clauses are introduced by the emotive complementizer *šcob(y)*. This complementizer consists of the indicative complementizer *ščo* and the element *by*.¹⁴ As expected, a co-occurring finite verb in the clause must appear in the past tense.

14. The indicative complementizer *ščo* introduces complements of verbs which express either a high degree of certainty, or just a minimal amount of emotion with respect to the action in the complement clause, e.g. *znaty* 'to know' or *nadijatys'a* 'to hope'. The complement clause occurs in the indicative mood.

- (10) vin xoče, ščob(y) ja ce. zrobyv
 he wants that(MOD) I this(ACC) did(m/sg)
 'He wants me to do this'

4.3. Injunctive (syntactically independent) *by*

As pointed out in example (6c), injunctive *by* serves to mark an attenuated imperative. The term injunctive is a designation for an imperative-type mood, and is consistent with Brecht (1977:34), who in turn adopts the term from Jakobson (1971:139). Both Jakobson and Brecht employ the term injunctive to describe Russian constructions, much the same in form and function as the ones in Ukrainian (see examples (11-12) below), in which 'the modal meaning expressed by the particle *by* is that of will-imposition' (Brecht 1977:34).

- (11) napysav *by* ty jij pod'aku
 wrote(m/sg) MOD you(sg) she(DAT) thank-you
 'You should write her a thank-you note'

- (12) pokosyv *by* vin nam travu
 mowed(m/sg) MOD he we(DAT) grass
 'He should mow our lawn'

Just as in conditional hypotheticals and emotive clauses, an injunctive construction also requires that a finite verb be inflected for the past tense.

It is important to note that the injunctive is not the only available means for expressing an imperative construction. In fact, Ukrainian has a separate imperative mood which is formally marked by a set of imperative endings in the 2sg., 1pl. and 2pl. The difference between the two types of imperatives lies in the way the message is conveyed. The imperative mood expresses commands in a manner that is more direct. In contrast, the injunctive mood expresses commands in a way that is more subtle. For this reason, a *by*-type command is considered to fulfill the function of an attenuated imperative.

4.4. Comparative-simile/Evidential (syntactically independent) *by*

This instance of *by* is optional. For this reason, its presence in examples (13-14) is marked with parentheses. When it does occur, it appears side by side with the two words (*ne*)*mov* and (*ne*)*nače*. These two words have the following two functions.

First, they are found in clauses of similitude, in which they introduce the second of two clauses being compared. As such, they may be called comparative-simile complementizers. They convey the meaning 'as if'/'as though' and express some kind of hypothetical parallelism between two actions or entities. Consider the following simile-like expression.

- (13) vin tak bih (ne)mov (by)/(ne)nače (b(y))
 he so ran(m/sg) as though
 xto za nym hnava'sa
 someone after him pursued(m/sg)
 'He was running so fast, as though someone were pursuing him'

Second, these two words function as evidential markers, modifying the probability of an event's occurrence. When they are present, it is understood that the event being modified by the evidential marker is both true and real, even though there are those who would deny it, either by personal choice or through a lack of information. Their approximate meaning is 'apparently'/'so it seems'.

- (14) vona (ne)mov (by)/(ne)nače (b(y)) xodyla iz mojim bratom
 she so it seems went(f/sg) with my brother
 'Apparently, she used to go out with my brother'

As mentioned, optionally, the element *by* may be added immediately after *(ne)mov* and *(ne)nače* in either of their two functions. However, the meaning of the expressions remains unchanged. The modality that is conveyed by *(ne)mov* and *(ne)nače* is not amplified by the addition of *by* in any quantifiable way. At best, this instance of the element *by* may serve to provide some emphasis. But essentially, its presence is redundant and its function is merely pleonastic.¹⁵ It is a formative whose presence truly is optional, in terms of function as well as meaning.

A final point to take note of is the fact that both the clauses of similitude and the evidential expressions do not show any restriction as to the tense of the finite verb (if one is present). Thus, all three verb tenses are possible with the optional element *by*.

4.5. Comparative-simile/Evidential (syntactically dependent) *by*

In addition to the words *(ne)mov* and *(ne)nače*, both of which may function either as comparative-simile complementizers or evidential markers, there is a third form, *niby*, which exhibits the same two meanings and functions. However, in contrast to *(ne)mov* and *(ne)nače*, both of which have the free-standing and meaningful roots *mov* and *nače*, the root of *niby* is bound, *ni-*, and carries no clear meaning in and of itself. Clearly, the modality it expresses is conveyed by the element *by*. In this particular case, the element *by* functions as a suffix, which attaches to the bound root *ni-*. Of course, unlike the *by*-element discussed in section 4.4, the *by* that co-occurs with *niby* is not optional.

15. Note that a pleonastic usage of *by* is frequently found with the two conditional complementizers *jakby b* and *aby b*.

With respect to examples that show the function of the element *by* as part of the comparative-simile complementizer and evidential marker *niby*, it is sufficient to refer back to the sample sentences given in (13-14) and to replace in either case *(ne)mov (by)* and *(ne)nače (b(y))* with *niby*.

5. The *by*-Constellation

The survey of *by*-elements in section 4 makes it clear that there is a variety of functions and formal properties that characterizes their entire set. For one, the *by*-elements convey several types of mood. For another, they can appear either as words or as affixes, and some of them have the ability to place restrictions on the tense of a co-occurring finite verb. Due to the functional and formal non-allomorphic differentiation that the *by*-elements exhibit it becomes clear that the five instances of the modal element *by* cannot all be analyzed as occurrences of the same morpheme. But, a five-morpheme analysis, in which each of the *by*-elements is treated as a completely separate and isolated morpheme from the rest, would treat recurrent properties of form and function across the set of *by*-elements as accidental.

This kind of seeming contradiction, whereby the five *by*-elements exhibit unity and diversity at the same time, presents a situation which calls for the theoretical construct of the morphological constellation. As defined by Janda and Joseph (1990), the morphological constellation is 'a group of elements which share at least one characteristic property of form but are distinguished by individual idiosyncrasies--either of form or of function--that prevent their being collapsed with one another'.

With respect to the five *by*-elements, there is one property that is shared by all five instances of modal *by* (see section 5.1), and five properties that distinguish amongst them (see sections 5.2 and 5.2.1-5.2.5).

5.1. The Five *by*-Elements: a Common Phonological Core

Up till now, the modal marker *by* has been introduced as a bi-segmental element, one which consists of a consonant plus vowel sequence. This is regarded as its full form. However, it was also pointed out in fn.4 and fn.7 that the modal element *by* may occur in a reduced form *b*, as in the emotive complementizer *ščob* or comparative-simile complementizer/evidential marker *(ne)nače (b)*. Thus, there are two phonological variants of the modal marker *by*: *by* and *b* (see section 5.2.2 for more details). Nevertheless, the segment [b] is present in both the full and reduced variants. As such, it may be considered as the phonological core that is common to all five *by*-elements. In fact, this common phonological core is the one property that allows us to unite the five *by*-elements as members of a single morphological constellation.

5.2. The Properties that Unite and Distinguish the Five *by*-Elements

Altogether there are five properties that differentiate amongst the five *by*-elements. These are listed below, in question form. Immediately following the list is a chart (figure 1) which provides responses to the questions-properties, thereby offering a summary of the formal properties of each individual *by*-element. Some additional discussion of these properties follows in sections 5.2.1-5.2.5.

(15) The Five Distinguishing Properties

- (a) is the element *by* a word, an affix, or neither, (i.e. an intermediary form, loosely labelled as a clitic)?¹⁶
- (b) does the element *by* show phonologically conditioned allomorphs, (i.e. *b* after a vowel-final word (or root))?
- (c) can the element *by* co-occur with the copula verb *buty*?
- (d) does the element *by* require a co-occurring finite verb to be [+PAST] tense?
- (e) does the element *by* convey modal meaning?

	<u>Word</u>	<u>Affix</u>	<u>Clitic</u>	<u>Allomorphy</u>	<u>Copula Co-occurrence</u>	<u>[+PAST] Agreement</u>	<u>Modal Meaning</u>
Conditional <i>by</i>	yes			yes	yes	yes	
Conditional/ Emotive <i>jakby, aby,</i> <i>žžob(y)</i>		yes		no/(yes)	yes	yes	yes
Injunctive <i>by</i>	yes			yes	no	yes	yes
Comparative- simile/Evidential <i>(ne)mov (by),</i> <i>(ne)naže (b(y))</i>			yes	no/(yes)	yes	no	no
Comparative- simile/Evidential <i>niby</i>		yes		no	yes	no	yes

Figure 1

5.2.1. *by*: Word, Affix or Clitic?

The results concerning the word or affix status of the five *by*-elements in figure 1 are based on a number of diagnostic tests, proposed by Zwicky (1984). Specifically, only five of these tests have been found to provide insights as to the wordhood or affixhood of the various instances of modal *by*. These are as follows: deletion under identity, distribution, ordering, word-internal voicing sandhi and word-level stress.¹⁷

As is seen in figure 1, there are two *by*-elements that behave as words. This includes the *by*-element that functions as the conditional (non- emotive) marker, as well as the instance of modal *by* that serves to mark the injunctive. With respect to the first test, it is possible for both of these elements to be absent in one of two parallel conjuncts, without depriving the conjunct that they are absent from of the modal meaning that they otherwise bring to it. Consider the conditional hypothetical in example (16). The main (conditioned) clause contains two conjoined predicates. Note that the element *by* does not need to be present in the second of the two parallel conjuncts. In other words, it is possible for the modality that is introduced in the first of the two conjuncts to be carried over into the second.

- (16) jakby bulo sonce, vin by vstav
if(MOD) was(n/sg) sun he MOD got up(m/sg)
 i pišov (by) u lis po hryby
 and went(m/sg)-----into forest after mushrooms
'If the sun were out, he would get up and go to the forest to gather some mushrooms'

16. It is important to note that the term *clitic* does not refer to a theoretical construct. In fact, all it is is 'an umbrella term, not a genuine category in grammatical theory' (Zwicky 1994:xiii). It is in this broad sense that I use the term *clitic* in order to refer to those *by*-elements which exhibit mixed word- and affix-like properties. However, it is more accurate to speak of *clitic-like* elements as either regular words or affixes, albeit 'with special (sometimes idiosyncratic) properties in addition to the properties they share with other members of their category' (Zwicky 1994:xvi).

17. It is important to point out that the term deletion under identity is used only for expository convenience, following Zwicky's (1984) enumeration of diagnostic criteria. By no means is it implied that a deletion process is actually taking place, and that elements present at one point in a representation are later removed by deletion. In fact, it is more appropriate to think of deletion phenomena as the absence of elements which might otherwise be expected to be present.

The unit of the word is the smallest syntactic constituent which is capable of being absent (or deleted, as in Transformational Grammar) without affecting the grammatical and semantic coherence of the conjunct from which it is absent. Given that these two *by*-elements can be absent in the second of two conjuncts, this means that they are acting syntactically as words. To continue, just like words, both of these elements have an unrestricted distribution because they are not limited to co-occurring with one specific lexical class. Also, they are freely ordered with respect to other words in a sentence. At the same time, neither of these two *by*-elements exhibits any word-internal voicing sandhi. Voicing sandhi in Ukrainian commonly takes place between a root and some affix, and is anticipatory in nature because it is triggered by a following voiced stop. In example (17) the voiced stop [b] in the noun-forming suffix *-ba* causes the root-final [č] to become voiced. Thus, the root-final [č] is retained in the verb, but in the noun it shows up as a [j].

- (17) /voloč-ba/ ----> [volõba] 'prowling/roaming'
 vs [volõčyty] 'to drag'

However, in the case of the two instances of modal *by* under discussion, the initial [b] does not cause a preceding voiceless consonant to undergo voicing. In example (18) the root-final [č] of the word *mjač* fails to undergo voicing, even though it is immediately followed by the [b] of *by*.

- (18) mjač by znyk, jakby...
 ball MOD disappeared(m/sg) if...
 'The ball would disappear, if...'

This again points to word-like behavior. Finally, even though these two *by*-elements do not carry word-level stress, this does not mean that they lose their status as words. Just as many function words they are prosodically weak, and simply require a stressed host to lean on. In fact, they can be more accurately referred to as obligatory (prosodic) leaners.

The instance of *by* that functions as a conditional/emotive marker and the *by* that serves as a (non-optional) comparative-simile/evidential marker both behave as affixes. To review the tests, if either one of these *by*-elements is absent in one of two parallel conjuncts, there is a loss of meaning and semantic coherence in the entire conjoined structure. This implies that they form a proper subpart of another word, i.e. the complementizer with which they co-occur. Consequently, their absence from their conjunct violates the lexical integrity of these complementizers. In fact, 'the general pattern is for no syntactic process to be allowed to refer exclusively to part of words' (Spencer 1991:42). Again, just like affixes, these *by*-elements show a restricted distribution, since they co-occur with a select class of complementizer-like words, *jak*, *a-*, *ščo* and *ni-*. Also, they do not show any freedom of movement. With respect to the voicing sandhi, there where the suitable conditions are present, voicing does take place. Thus, in the complementizer *jakby*, the [k] assimilates in voicing to the [b] of *by*, giving

rise to a [g] in *jagby*.¹⁸ A final note about their affixal status is their ability to carry stress which is assigned at the word level. Since stress assignment is, to a large extent, arbitrary in Ukrainian, it is not surprising that affixal *by* ends up being stressed in some, but not all of the complementizers it attaches to. Thus, it is stressed in *jakby*, but not in *aby*, *ščob(y)* or *niby*. In contrast, recall that the two *by*-elements with word status never carry lexical stress.

As is seen in figure 1, optional *by*, the one that occurs in comparative-simile and evidential expressions, has been loosely labelled as a clitic. Because of its optionality, its absence in one of two parallel conjuncts does not provide any insights as to its word or affix status. Also, it never occurs in a phonological context where voicing sandhi could be triggered. Its lack of stress may suggest that it is word-like, but its distribution is quite restricted, since it co-occurs only with the comparative-simile complementizers and evidential markers *(ne)mov* and *(ne)nače*. Similarly, like affixes, it seems to lack free ordering with respect to other elements in a sentence. But, unlike affixal *by*, this instance of *by* does show some freedom of ordering with respect to the emphatic marker *ž(e)*.¹⁹ Both of the following orders are acceptable: *(ne)nače b že* and *(ne)nače ž by*. In sum, this particular *by*-element is neither clearly a word nor an affix.²⁰ For the purpose of this paper, I will continue to use the term clitic when referring to optional *by*.

5.2.2. *by*: Allomorphs *by/b*?

As was pointed out in section 5.1, the modal marker *by* has two variants, the full form *by* and the reduced form *b*. The full form *by* is expected after consonant-final words (or roots) while the reduced form *b* is expected after vowel-final words (or roots). However, this allomorphy is not always followed. Sometimes, instead of the reduced form *b*, the full form *by* is found after vowel-final endings. Thus, the five *by*-elements show different behavior as to whether they exhibit this allomorphy. The two *by*-elements behaving as words follow this allomorphy quite regularly. In other words, after a vowel-

18. Although the complementizer *jakby* has no related derivatives through which the presence of an underlying [k] can be confirmed, it is important to note that this complementizer may be pronounced with a voiceless [k], especially in slower speech.

19. The emphatic marker *ž(e)* has two phonologically conditioned variants: *že*, which occurs after consonant-final words, and *ž*, which occurs after vowel-final words.

20. Optional *by* could be treated as an irregular affix, one which shows more freedom of movement than regular affixes. However, its mobility seems to be due to stylistic reasons. This is suggestive of behavior that is more characteristic of words. As Nevis and Joseph (1992) argue based on the behavior of the reflexive affix in Lithuanian, an element may be considered an affix when it shows mobility due to grammatical reasons.

final ending the reduced allomorph *b* is usually found. In contrast, the two *by*-elements behaving as affixes, as well as clitic *by* fail to follow this allomorphy. After a vowel-final ending the full allomorph *by* is found, as in *aby* and *niby*, and also *ščoby* and *(ne)nače (by)*. However, with both *ščoby* and *(ne)nače (by)* the full form *by* is not firmly established (see section 6.1.4). Thus, it is necessary to recognize the fact that both affixal conditional/emotive *by* and clitic *by* may exhibit both allomorphs.

5.2.3. *by*: Restriction of the Copula?

Of all five *by*-elements, injunctive *by* is the only one which may not co-occur with a copula. Thus, while it is possible to express commands using the imperative mood in which the copula is present, a similar request cannot be expressed with the injunctive and the modal marker *by*. Consider the following imperative expression, and the corresponding ungrammatical injunctive command.

- (19) *bud'* *dobrym*
 be(2/sg) *good(m)*
 'Be good!'

- (20) **buv* *by* *ty* *dobrym*
 were(m/sg) MOD *you(2sg)* *good(m)*
 'You should be good'

Consequently, this co-occurrence restriction appears to be an idiosyncrasy of the formal behavior of injunctive *by*.

5.2.4. *by*: Finite Verb is [+PAST]?

In section 3 it was pointed out that there is an intimate grammatical relationship between the [+MOD] element *by* and the finite verb that co-occurs in its clause, namely, the element *by* requires that the tense on the finite verb be [+PAST]. This may be referred to as the [+MOD]-*by*-[+PAST] agreement. As was mentioned in the presentation of the five *by*-elements in sections 4.1-4.5, not all of the *by*-elements require this agreement. In fact, only the two *by*-elements that serve as conditional and conditional/emotive markers, as well as injunctive *by*, require a past tense inflection on a co-occurring finite verb.

5.2.5. *by*: Modal Meaning?

In most cases, the *by*-elements introduce some kind of modal, specifically, hypothetical aspect to the expression in which they occur. Thus, both of the *by*-elements that serve as conditional and emotive markers introduce strong hypothetical meaning. In the conditional hypothetical construction, the outcome of some action is dependent on some condition, but there is no certainty as to whether this condition may be realized. In

emotive clauses the actions usually represent someone's wish. Thus, there is a strong sense in which such an action is non-existent, hence, hypothetical. The injunctive commands are hypothetical because they too refer to actions that are yet to be realized. And, in the clauses of similitude and evidential expressions in which the word *niby* is found, the element *by* introduces metaphor and probability respectively, notions that are clearly hypothetical. Of all the *by*-elements, it is only clitic *by*, (whose presence is always optional in a clause), that fails to introduce any modality whatsoever. Even though its occurrence is associated with a hypothetical context, it itself does not have a strong index of modal, hypothetical aspect.

6. The Role of Diachrony in Morphological Constellations

As Janda and Joseph (1990) write in reference to the morphological constellation, 'the real category to be recognized by a grammar...is the overall complex of interrelated, formally similar elements'. It is worth pointing out, however, that this kind of fragmented synchronic state of affairs is usually a result of diachronic change, progressing in one of two possible directions.

First, an originally more unitary situation may become diversified, giving rise to what is known as diachronic fragmentation. The various processes of Sanskrit reduplication are an example of such fragmentation. In fact, philological evidence, coupled with comparative reconstruction, points to a much more unitary reduplication phenomenon within Proto-Indo-European (Janda and Joseph 1986:94). Second, a synchronic state of fragmentation may arise by way of the diachronic convergence of phenomena that once were quite diverse. For example, the three morphological rules that suffix the plural, possessive and 3sg. present indicative marker *-s* in English seem to constitute some kind of unitary collective entity, due to similar allomorphy facts. But, historically all three morphemes derive from different sources, and the formal similarities shared by these three elements have increased over the centuries, (though note that these three elements have not become entirely identical in form). Thus, their current homophony is a historical innovation (Janda and Joseph 1990).

There is, therefore, an important diachronic aspect to the morphological constellation. Essentially, recognizing the need for the morphological constellation means recognizing the fact that any synchronic state of a language is one of an endless number of such states on a continuum of time. As such, sometimes a given synchronic state may present relationships between a set of linguistic elements that are best described in terms of a strict binary opposition. However, the opposite holds true as well. In fact, because of its very nature, the morphological constellation can easily expand or contract to account for just the existing number of interrelationships that hold between a set of elements at any given point in time.

6.1. The *by*-Constellation: a Case of Diachronic Fragmentation

The network of generalizations that characterizes the five-member *by*-constellation is the product of several centuries of diachronic fragmentation. In the process of its development, the Modern Ukrainian modal element *by* was affected by two degrees of morphologization, from word to clitichood, and from word to affixhood, possibly via a stage of cliticization. A loss of grammatical status, and concomitant semantic bleaching were two further changes that affected modal *by*. Certainly, the above changes did not all affect modal *by* in each and every one of its many functions. In fact, if this is what had happened, no diversification would be expected to have occurred. Instead, only in some of its functions did modal *by* undergo one, or two of the above-mentioned changes. Eventually, what had started out as a situation with a number of formally identical instances of *by* carrying out different functions, turned into a situation in which the elements were differentiated formally as well as functionally. At this point, the different instances of *by* could no longer be treated as one and the same morpheme, yet they were not distinct enough from one another to be treated as a group of isolated *by*-morphemes. This, of course, marks the appearance of the *by*-constellation.

Various aspects of the diachronic fragmentation of modal *by* are taken up in sections 6.1.2-6.1.5. To fill out the framework of time within which the fragmentation was taking place, a text-based chronology of the development of modal *by* is given in section 6.1.1 below.

6.1.1. Chronology of the Major Stages in the History of the Old East Slavic Subjunctive Mood and Modal *by*

In Old East Slavic (ca. 11-13c.) the subjunctive mood was marked by an analytic construction consisting of the *l*-participle and inflected forms of the copula *byti* in the aorist tense (see example (1)) (Nimchuk et al. 1978:300). In fact, the copula auxiliary could also appear in the conditional inflection, but this had all but disappeared in Old Church Slavonic and is not even attested in Old East Slavic. In Ukrainian, by the 14/15c., the form *by*, the 2/3sg. aorist of the copula auxiliary, had spread to the respective plural forms, replacing both the 2pl. (*byste*) and the 3pl. (*byše*). Only the 1sg. (*byxū*) and the 1pl. (*byxomū*) forms still remained marked for both person and number, although frequency-wise their numbers were also beginning to dwindle (Nimchuk et al. 1978:303). During the 16-18c. the auxiliary appeared predominantly in a single uninflected shape, since the form *by* was used with all persons and in all numbers (Nimchuk et al. 1978:304). Finally, before the end of the 18c. the auxiliary begins to appear not only in its original form *by*, but also in a reduced form *bū* (Nimchuk et al. 1978:305).²¹ As for

21. The form *bū* was certainly mono-segmental at this point. Not only was the reduced vowel, i.e. the jer, not etymological in this form, but it was no longer pronounced at this

the present time, the subjunctive mood is marked by the modal element *by*, which has two allomorphs, *by* and *b*. What was once the copula auxiliary in the aorist inflection is now a single uninflected form. The original *l*-participle is now the past tense, and the original analytic unit (*l*-participle plus aorist copula auxiliary), which was once the sole marker of the subjunctive mood has undergone disintegration. Now, the modal element *by* can occur in both infinitival and nominal (verbless) clauses, and when it occurs in a finite clause it requires the co-occurring verb to have a past tense inflection.

6.1.2. The Morpholexicalization of the Emotive Attitude and the Morphologization of Modal *by*: the Emotive Complementizer *ščob(y)*

In Old Church Slavonic the emotive attitude was not always required in those emotive clauses which were introduced by the verb *xotěti* 'to want'. However, in Russian, as well as in Ukrainian, the emotive attitude is obligatory after this verb of desire (Garde 1961:26). Assuming that Old Church Slavonic provides evidence of a situation that was common to all the Slavic languages of nearly one thousand years ago, it is clear that a change in the use of the emotive attitude in emotive clauses has taken place. According to Garde (1961:29), when the verb *xotěti* introduced a subordinate clause in Old Church Slavonic, the emotive attitude was invoked only when it was apparent from the context that the wish expressed by the subject of the verb *xotěti* had not been realized. However, if it was clear that the realization of the wish was, or is certain to be fulfilled, then the emotive attitude was not required. In contrast, in Ukrainian the emotive attitude is obligatory after the verb *xotity*, regardless of the actual realization of the wish. In this particular instance the use of the emotive attitude has become morpholexicalized, since its presence is directly required by a particular lexical item, the verb *xotity*. Whereas the use of the emotive attitude in emotive clauses was once determined by the general pragmatic context, now it has become restricted to specific lexical items. In a sense, a fragmentation has occurred. The absolute presence of the emotive attitude in emotive clauses has now become particularized to a clearly defined set of verbs, one of which is *xotity*. Janda and Joseph (1986:95) write that morpholexicalization is commonly encountered as one of the leading causes of fragmentation, and they cite several instances of this process in reduplication phenomena, both from Sanskrit, and a variety of other languages.

Once the emotive attitude had undergone morpholexicalization with respect to the verb *xotity*, the presence of the emotive attitude with this verb was now a requirement. This would mean that this information could now be encoded in the verb itself.

time. In fact, it was written here due to a long-standing orthographic tradition. The jers, which had lost all phonetic value by the 13c., were still being inserted in those places where they had once been pronounced as reduced vowels. As well, they were inserted in those places where vowels other than jers had been lost.

Therefore, a verb like *xotity* could now subcategorize for a complement in the emotive attitude. Ultimately, this would have led to the development of an emotive complementizer *ščob(y)*, with the morphologization of original word-like *by*. Indeed, this is what we find in Modern Ukrainian. The verb *xotity* subcategorizes for the emotive complementizer *ščob(y)* and the *by* contained within it works as an affix.

By way of the process of morphologization some instances of the originally word-like modal element *by* turned into the affix that introduces the emotive attitude in emotive clauses. More specifically, this is an inflectional affix because it encodes grammatical information, namely the grammatical category of modality. This allows us to distinguish between an indicative complementizer *ščo* and a corresponding emotive complementizer *ščob(y)*, whose inflectional affix *-by* introduces the feature of modality [+MOD].²²

At the same time, recognizing a pair of indicative and emotive complementizers allows for a simple explanation of the facts concerning verbs and their complement types. For example, a verb like *xotity* can only take an emotive complement (see example (21)), while a verb like *znaty* 'to know' may take both an indicative complement (see example (22)), and what seems to be an emotive one (see example (23)).

- (21) ja xoču, *ščob(y)* vin pišov
I want that(MOD) he went(m/sg)
'I want him to go'

- (22) ja znaju, *ščo* vin pišov
I know that he went(m/sg)
'I know that he went'

- (23) ja znaju, *ščo* vin *by* pišov
I know that he MOD went(m/sg)
'I know that he would go'

It is interesting to compare examples (21) and (23). While both of the complements contain the element *by*, only the complement of *xotity* is introduced by the emotive complementizer *ščob(y)*. The allegedly emotive complement of *znaty* is introduced by the indicative complementizer *ščo*. Even though the element *by* is present, it does not follow *ščo*. In fact, it would be ungrammatical if the entire sequence *ščob(y)* were to introduce a complement of a verb like *znaty*. To continue, the phrase in example (23), which is glossed as 'that he would go', does not represent a genuine emotive clause.

22. Similarly, there is a set of indicative and conditional complementizers, *jak* and *jakby*. However, the development of *jakby* is not discussed in this paper.

Rather, it should be interpreted as the main clause of an embedded conditional hypothetical. Expressed in full, example (23) could read 'I know [that [he would go] [if he were here]].²³ Once it is understood that the complement clause of *znaty* is not emotive, it becomes clear why the entire sequence *ščob(y)* cannot introduce the clause. Thus, a verb like *znaty* does not subcategorize for an emotive complement, but a verb like *xotity* does.

(24) *xotity*[+EMOT]: *xotity*, [*ščob(y)*...] 'to want'

(25) *znaty*[+INDIC]: *znaty*, [*ščo*...] 'to know'
 znaty, [*ščo* [...*by*...] [*jakby*...]]

Note that the proposal for an inflected complementizer may seem somewhat unusual, even if this is only because a similar analysis of the emotive complementizer in Ukrainian has never been proposed in the literature. Nevertheless, inflected complementizers are not uncommon. For example, in West Flemish, a dialect of Dutch, there are complementizers that agree in number and person with the subject and inflection of the embedded clause (Haegeman 1991:119). At the same time, function words other than complementizers can carry inflection. For instance, Hinrichs (1984) presents a case for inflected prepositions in German, and pronouns are often inflected with case markings parallel to the nominal inflection.

A final note in support of the inflected emotive complementizer can be drawn from diachrony regarding directional tendencies in the process of morphologization. Inflectional affixes tend to have function words as their source, while derivational affixes do not. Joseph and Janda's (1988:197) enumeration of several cases of morphologization from a variety of languages seems to support this observation. Also, Jeffers and Zwicky (1980:59) note that 'whether the end product is an inflectional or derivational affix seems to depend heavily on the meanings expressed, in particular on whether a change of word class is involved or not'. In the case of the emotive complementizer, when the affix *-by* is added, no change in word class is involved. Furthermore, the source of the [+MOD] affix *-by* is the copula auxiliary, which served as a function word in the Old East Slavic analytic construction expressing the subjunctive mood.

Treating the emotive affix *-by* as inflectional can be motivated on both language-internal synchronic and diachronic grounds, as well as on cross-linguistic evidence. Coupled with evidence of the morpholexical particularization of the emotive attitude, this

23. Note that it is sufficient for a conditional hypothetical to consist only of the main (conditioned) clause. Even though the condition is not overtly present, it is, nevertheless, understood.

morphologization of *by* provides proof of the gradual fragmentation of the unitary modal element *by*.

6.1.3. The Degrammaticalization and Semantic Bleaching of Modal *by*: the Comparative-Simile Complementizers *niby*, *(ne)mov (by)* and *(ne)nače (b(y))*

In addition to the comparative-simile complementizer *niby*, Modern Ukrainian has the comparative-simile complementizer *jakby*, which fulfills the same function. Unlike *niby*, *jakby* is less frequent and more dialectal. Also, there is another difference between the two. While the *by* in *niby* does not require a co-occurring finite verb to have a past tense inflection, the *by* in *jakby* does. As a result, the *by* in the comparative-simile complementizer *jakby* can be considered as an instance of conditional/emotive affixal *by*. Essentially, it does not show any additional formal differentiation from it.

Keeping this in mind, I will take a brief look at the textual evidence in order to form a picture of the diachronic fragmentation that took place in the case of the comparative-simile complementizers *niby* and *jakby*. The complementizer *jakby* was in frequent use right until the 18c., while its synonym *niby* first began to appear in the late 17c. (Nimchuk et al. 1978:478-479). The root of *niby* derives from the Old East Slavic particle *ně*, which was used to qualify the indeterminate nature of some entity or event. However, this element is very seldom attested during the 13-16c. (Nimchuk et al. 1978:471).

An interesting question to ask is the following: why was the [+MOD]-*by*-[+PAST] agreement lost with the *by* that forms part of *niby*, and why was it retained with the *by* that forms part of *jakby*? Consider the following hypothesis. The root *ni-*, (which was bound, because it no longer occurred on its own), already encoded modal meaning as a result of an earlier function as a qualifier of indeterminacy. Thus, the addition of modal *by* could have been perceived as semantically redundant. This could have led to a weakening of the [+MOD] feature of this *by*, ultimately leading to an elimination of the selection for the past tense on a co-occurring finite verb. In contrast, the comparative element *jak* did not express any modality on its own. Therefore, the addition of *by* clearly introduced modal meaning to the comparative expression, and its [+MOD] feature was grammatically significant, implying further that the selection for a past tense verb would be maintained.

Interestingly, note that in a synchronic analysis of Modern Ukrainian it is the *by* in *niby* that is perceived as actually carrying modal meaning. As was pointed out in section 4.5, this is due to the fact that no clear meaning can be assigned to the bound root *ni-*. Also, speakers are aware of the fact that the element *by* encodes modality elsewhere. As far as *niby* goes synchronically, the *by* is still understood as a meaningful modal element, even though it does not require a co-occurring finite verb to be marked for the

past tense. This further implies that it does not introduce the grammatical feature [+MOD] in its clause.²⁴

In a sense, the synchronic analysis of *niby* is the opposite of the diachronic analysis that accounts for the formation of this comparative-simile complementizer. Synchronically it is the *by* that carries modal meaning. The bound root *ni-* has no clear meaning and serves only as a comparative-simile complementizer stem. Diachronically the modal meaning of *by* was weakened, and made redundant due to the modality expressed by the comparative-simile complementizer root *ni-*.

Timewise, the two comparative-simile complementizers *(ne)mov* and *(ne)nače* appeared later than *niby*. Since both of them have a clear modal meaning of their own, the *by* that may co-occur with them did not need to add any additional nuances of modality. Consequently, it too did not need to place any requirement on the tense of a co-occurring finite verb. However, because both *(ne)mov* and *(ne)nače* are free words, this *by*-element never developed the need to be obligatorily present, as did the *by* that began co-occurring with the bound root *ni-*. Thus, it has developed the greatest distance from the original modal marker *by*. Apart from undergoing degrammaticalization and losing its status as a grammatical marker, (as well as becoming a clitic), it also underwent semantic bleaching, simply becoming some kind of formative that co-occurs optionally with both *(ne)mov* and *(ne)nače*.²⁵

6.1.4. Resolution of the *by/b* Allomorphy via a Locally-driven Analogy

An important piece of information from section 6.1.1 is the fact that the appearance of allomorphy of the modal element *by* was already well established by the end of the 18c. In fact, this allomorphy first began to appear in the texts in the 17c. (Nimchuk et al. 1978:492), suggesting that its manifestation in the spoken medium may have taken place a century earlier, already in the 16c. In all likelihood, the current synchronic distribution of the presence or absence of allomorphy was not a fact of 16/17c. Ukrainian. (Recall figure 1, where it is shown that word-like *by* does show

24. Coincidentally, since this *by* does not require [+MOD]-*by*-[+PAST] agreement but does carry modal meaning, this implies that the feature [+MOD] must be a purely grammatical notion defining the category of modality. Therefore, even if a *by*-element does not carry the grammatical feature [+MOD], (like the *by* in *niby*), it can still convey modal meaning. This can be extended to suggest that the affix *-by* in *niby* is derivational, because it has lost the feature [+MOD], and with it, the status of a grammatical marker.

25. Diachronically, the *by* that forms part of *niby* underwent these same developments, but its modality has been re-established synchronically, based on the desemanticization of the otherwise obsolete root *ni-*.

allomorphy, while affixal and clitic *by* basically do not.) Thus, a Middle Ukrainian text from 1698 still shows the original full allomorph *by* in what later became the Modern Ukrainian emotive complementizer *ščob(y)* (written as <*ščoby*> in the text). But, in a slightly earlier text, dating from 1691, the new reduced allomorph *b* is already found as well <*ščob*>. In fact, the form with reduced *b* appears ever more frequently in the texts as one moves forward in time. Compare this with texts from the 14-16. in which this expression is written only with the full form *by*, <*ščoby*> (Nimchuk et al. 1978:460). In fact, this is the form of *by* that is peculiar to the set of *by*-complementizers of Modern Ukrainian.

Considering that the alternant with *by*, (i.e. *ščoby*), is currently predominant in speech, and may be regarded as a largely spoken form, while *ščob* is basically restricted to writing, and is considered by dictionaries and grammars as the prescriptive form, it is necessary to relate the modern-day synchronic distribution with the facts of Middle Ukrainian texts, in which both variants co-existed, i.e. first there was *ščoby*, and then, increasingly, *ščob*. Actually, from this point on, two paths of development are possible in the resolution of this allomorphy, each of which supports the fact that there was, or still is, some fragmentation of the *by*-elements.

In one picture, some expressions develop two co-existing alternants. For example, first there is *ščoby*, then *ščob* via allomorphy. In contrast, an expression like *jakby* continues on in a single variant, given that the reduced allomorph *b* is not possible post-consonantly, i.e. **jakb*. In time, the newer variant *ščob* begins to gain ground, and spreads, destined to become the prescriptive form in Standard Modern Ukrainian. Now, however, the reverse trend seems to be at work. The variant *ščoby* seems to be increasingly preferred to *ščob*, especially in speech. Thus, due to its stability as a non-varying form, the complementizer *jakby* could very likely have become the model for a form-based analogy, motivating the reappearance of the full form *by* in what is now the emotive complementizer *ščoby*. Such an analogy supports the fact that there is some group of elements, whose members seem to form some coherent unit. In this case, this is the group of *by*-complementizers. This unit then becomes the domain for the application of an analogy, an analogy that is 'local' because it fails to go beyond this unit to affect *by*-elements that do not form part of complementizers. Of course, some fragmentation must have taken place at some prior point in time in order for this grouping of *by*-complementizers to have come into being.

In another picture, the variant with the reduced allomorph, *ščob*, never gains any ground in the spoken language, but simply persists as a written variant, ultimately becoming the prescriptive form it is today. In this case, the original variant *ščoby* never goes out of spoken use. If, as it is assumed under this hypothesis, the variant *ščob* never became accepted in speech, this again may support the idea that some fragmentation of the *by*-elements could have taken place by the 16/17c. Hence, expressions like *jakby* and *ščoby* possibly already exhibited similarities in syntactic patterning, i.e. as complementizers, and a form like *jakby*, which did not have any other alternant available,

could have exerted an influence on the form *ščoby*, reinforcing it with the full allomorph *by*, as is characteristic of all *by*-complementizers.

No matter which of these two hypotheses is more real in terms of the actual sequence of events, the observation that is most significant for this discussion is the fact that fragmentation of modal *by* had occurred. Some instances of *by* had become part of complementizers and this facilitated either the reintroduction or retention of the form *ščoby* (vs *ščob*), a form which has the full allomorph *by*, as do all other complementizers with *by*.

While there is no doubt that *ščob* is the prescriptive variant and *ščoby* is a variant of spoken speech, there is less certainty about which of these two variants is older or newer. Depending on the actual steps that took place in the development of this complementizer, *ščoby* could either be newer, if it is a recently analogically-driven formation, with no direct connection with the *ščoby* of the 16/17c., or it could be older, if it is a direct, uninterrupted continuation of the original form (with *ščob* coming in as a largely written variant).

Finally, recall that there is an instance of clitic *by* which appears in the expected reduced allomorph *b* after the vowel-final stem *(ne)nače*. Now, however, it may be encountered in its full allomorph *by*, contrary to the phonologically determined distribution. Since the appearance of the expression *(ne)nače (b)* is rather late, (no dates are given, though it did not appear until after *niby*, which is first attested in the late 17c. (Nimchuk et al. 1978:479)), it is very likely that the element *by* obeyed the then current allomorphy, suggesting that an alternant *(ne)nače (by)*, with the full allomorph *by*, probably never existed when this expression first appeared. Therefore, the appearance of the alternant *(ne)nače (by)* is yet another example of the workings of a local analogy. As a comparative-simile complementizer and evidential marker, the alternant *(ne)nače (b)*, with the predictable reduced allomorph *b*, patterns syntactically with *(ne)mov (by)* and *niby*, other similar comparative-simile complementizers and evidential markers. Since the latter two expressions both can occur only with the full allomorph *by*, it is not surprising that the full allomorph is also appearing with *(ne)nače*, thereby bringing unity of form to the entire set of comparative-simile complementizers and evidential markers. Again, the existence of this grouping of *by*-complementizers and evidential markers points to a fragmentation of a set of originally identical *by*-elements.

In summary, it may seem that there is a correlation between the presence or absence of allomorphy and the word/clitic/affix status of the *by*-elements, i.e., word-like *by* does show the allomorphy, but affixal and clitic *by* (basically) do not. This is a correlation that is obvious in retrospect. The absence of allomorphy should not be seen as deriving directly from the affixal status of morphemes. After all, affixhood is not a prerequisite for allomorphy. And, even though affixal *by* does not follow the allomorphy in the form *ščoby*, it is important to point out that there is, even today, an instance of affixal *by* in the variant *ščob* which does show the presence of allomorphy. Rather, the

absence of allomorphy derives indirectly from the affixal status of the *by*-elements, as determined by the locally-driven analogy which operates across the set of *by*-complementizers in which the *by*-elements occur in affixal form. Also, there is no reason to believe (on the basis of both morphological and syntactic evidence) that clitic *by* has already turned into an affix, and yet this particular instance of *by* is beginning to show an absence of allomorphy, exactly because of the form-based analogy, whose domain is the set of *by*-complementizers and evidential markers, of which clitic *by* is a member. Thus, the above-mentioned correlation supports the fact that fragmentation of the original *by*-unity has occurred.²⁶

6.1.5. A Diachronic Chip off the Old *by*-Block

In the three preceding sections I provided an outline of the various ways in which the diachronic fragmentation of the subjunctive mood and of the modal element *by* have taken place, starting from the times of Old East Slavic, and moving right up to the present state of Modern Ukrainian. Even though it was seen that the continuous fragmentation resulted in a break-up of the original *by*-unity, yielding several formally differentiated instances of *by*, it was also seen that all of these elements still maintain a relationship amongst themselves, thereby preserving their so-called 'ancestral heritage'.

However, there is one instance of *by* in Ukrainian which has completely severed its ties with the set of five *by*-elements that form the *by*-constellation. This *by* is found in its reduced form in two words, *sebto* and *tobto*, both of which are used as parentheticals, with the meaning 'that is/'so to say'. Diachronically these words are made up of the deictic pronouns *se* 'this', (*ce* in Modern Ukrainian), and *to* 'that', followed by the modal element *by* in its reduced allomorph *b*, and the emphatic marker *to* (Nimchuk et al. 1978:464). But, synchronically these words are not parsible, and are analyzed as monomorphemic. Native speakers have no inkling as to the fact that the segment [b] in these words derives from the modal marker *by*. In answer to my query as to the etymology of *sebto* and *tobto*, one speaker was unable to relate these words synchronically to any other set or sets of words in the language. Another speaker offered an interesting etymology of

26. Unfortunately, in the sampling of cited examples given by Nimchuk et al. (1978) the expressions *aby* and *niby*, which now function as the conditional complementizer and comparative-simile complementizer/evidential marker respectively, never appear with the reduced allomorph *b*. Unattested forms like **<ab>* and **<nib>* could have been possible with these two particular examples, just like *<shchob>* vs *<shchoby>*, as attested in the 17c. Furthermore, since the form *nib* does exist dialectally, as shown by Hrinchenko's (1958-1959) dictionary, it probably did undergo the effects of allomorphy. A more thorough check of available written evidence would be suggested before seeing how these two expressions fit into the development of the *by*-complementizers.

her own, one which derives these words from the dative forms of the personal pronouns, *sobi* (3sg.) and *tobi* (2sg.) respectively, and the emphatic marker *to*. Clearly, this unetymological segmentation would not be possible if the segment [b] were still perceived as relatable to the five *by*-elements in the *by*-constellation.

The purpose of including this 'former' *by*-element in the discussion was to give yet additional proof of the fragmentation of the modal marker *by*. However, this particular instance of *by* chipped away completely from the interrelated network of elements in the *by*-constellation. This shows that, at least in this particular instance, the fragmentation process has been taken to its ultimate end. Synchronically, the segment [b] that is found in *sebto* and *tobto* is in no way a member of the *by*-constellation. It is only diachronically that a link can still be maintained between the *by*-remnant and the modal marker *by*.

7. Conclusion

In this paper I have shown that there are five distinct manifestations of the modal element *by* in Modern Ukrainian. I drew on various syntactic, morphological, phonological and semantic evidence to point out the individuality of these five *by*-elements. At the same time, I pointed out overlap in form and function, suggesting that the five *by*-elements represent a morphological constellation. Since constellations are a result of the workings of diachrony, I showed the various processes by way of which the original unitary *by*-morpheme of Old East Slavic became fragmented over the centuries, giving rise to five similar-but-distinct *by*-elements in Modern Ukrainian.

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